LEGISLATIVE SERVICES AGENCY

Office of Fiscal and Management Analysis

200 W. Washington Street, Suite 302
Indianapolis, Indiana 46204-2789
(317) 233-0696
(317) 232-9511 (FAX)

MEMORANDUM

To: Interim Study Committee on Fiscal Policy

From: Office of Fiscal and Management Analysis

Re: EDGE Credit

Date: October 21, 2015

This memorandum reports findings of research by the Office of Fiscal and Management Analysis (OFMA) on the potential fiscal impact and effectiveness of the Economic Development for a Growing Economy (EDGE) credit.

The contents of the memorandum are divided into the following sections.

REASON FOR RESEARCH

Section 281 of HEA 1001-2015 urged the Legislative Council to assign to the appropriate study committee the topic of studying the EDGE tax credit program during the 2015 legislative interim. The legislation also requires the study committee assigned the topic to issue a final report to the Legislative Council by November 1, 2015. The report must contain the study committee's findings and recommendations, including any recommended legislation, relating to the study of the EDGE tax credit program.

The Legislative Council subsequently assigned the study topic to the Interim Study Committee on Fiscal Policy (Section 5 of Legislative Council Resolution 15-01).

BACKGROUND

The EDGE credit is a discretionary tax incentive targeted to businesses investing in capital projects in Indiana that either create new jobs or retain existing jobs in the state. The EDGE credit is administered by the Indiana Economic Development Corporation (IEDC).[1] The EDGE credit is awarded to businesses meeting project, employment, and other criteria as determined by the IEDC and awarded at the discretion of the IEDC Board. EDGE credits for job creation projects have been provided since tax year 1994 while EDGE credits for job retention projects have been provided since tax year 2003. The IEDC determines the amount and duration of the EDGE credit for each approved project and enters into a contract with the credit recipient specifying details of the project, the credits to be awarded, employment requirements, and the like. The duration of the EDGE credit is limited to 10 taxable years for any project. The EDGE credit amount for any project may be set as a percentage of the incremental income tax withholdings attributable to the jobs created or retained by the project. The credit amount also may be limited to a fixed dollar amount. However, EDGE credits for job creation projects cannot exceed the incremental income tax withholdings of the new employees. The EDGE credit may be claimed against a taxpayer's tax liability and, at the discretion of the IEDC, the credit is also refundable.

Besides the credit parameters outlined above, the EDGE credit for job retention has also been subject to aggregate limits on the amount that may be awarded by the IEDC during a fiscal year. The aggregate limit on EDGE credits for job retention was $5 M in FY 2004 and FY 2005, and has been $10 M per year since FY 2006. The EDGE credit for job creation projects has historically not been subject to an aggregate limit. However, P.L. 213-2015 imposed a one-year limit of $225 M on EDGE credit awards during FY 2016.

SUMMARY OF EDGE CREDIT DATA

In June 2015 the IEDC and the Legislative Services Agency (LSA) entered into a Memorandum of Understanding providing for IEDC to share project-level EDGE credit data with LSA. These data include projects approved for EDGE credits from the beginning of the program in 1994 through project approvals for a full year in 2014 and some project approvals in 2015. These data also include information on the individual projects (e.g., project location, industry sector) performance goals (e.g., expected job creation, actual job creation), and tax credit information (e.g., credit percentage, credit duration, certified credit amounts).

The database contains 1,400 projects that are either currently active or the terms of the contract are completed. About 99% of the projects are business expansion or attraction projects so they are receiving EDGE credits for job creation. The remaining 1% of the projects are retention projects receiving EDGE credits for job retention.

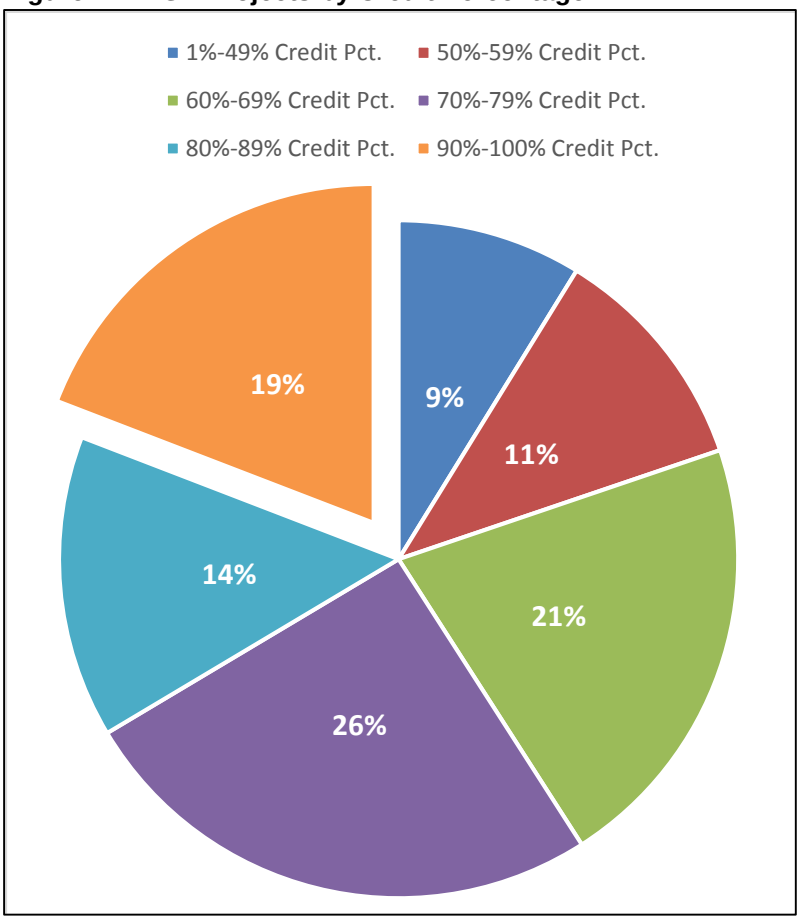
The total amount of EDGE credits approved under these contracts is $1,820 M, but the EDGE credits certified and made available for businesses to claim under these contracts was about $596 M. The average annual tax credit amount certified per project is about $110,000, and the average number of years that businesses could receive certifications of EDGE credits under these contracts is about 9 years.

In terms of the credit percentages, not all businesses approved for EDGE credits receive the maximum credit – a credit equal to 100% of the income tax withholdings of new or retained

[1] The EDGE credit was administered by the now-defunct Indiana Department of Commerce from the time of its incipience in 1994 until administration was taken over by the IEDC in 2005.

employees. Figure 1 displays the distribution of projects by credit percentage and indicates that about 19% of the projects have received a credit percentage of at least 90% of the new or retained employee withholdings, while about 9% of the projects received a credit percentage of less than 50% of the new or retained employee withholdings.

Figure 1: EDGE Projects by Credit Percentage



Source: Raw data provided by the Indiana Economic Development Corporation, data analysis by the Office of Fiscal and Management Analysis.

At least half of the projects involve businesses identified as manufacturing. Table 1 reports the distribution of EDGE projects by industry sector. Warehouse and transportation sector businesses make up about 6% of the projects, and about 13.6% of the projects come from businesses in the sectors of information, finance, insurance, and real estate services, and professional, scientific, and technical services.

Table 1: EDGE Projects by Industry Sector

Industry Sector	Number of Projects	Percent of Projects
Manufacturing	679	48.50%
Wholesale Trade	28	2.00%
Warehouse & Transport	84	6.00%
Information	54	3.86%
Finance, Insurance, & Real Estate	40	2.86%
Professional, Scientific, and Technical	96	6.86%
Mgt. of Companies, Admin. Support, and Waste Mgt.	37	2.64%
All other Industrial Sectors	61	4.36%
Unspecified	321	22.93%
Total	**1,400**	**100.00%**

Source: Raw data provided by the Indiana Economic Development Corporation, data analysis by the Office of Fiscal and Management Analysis.

Almost 21% of the EDGE projects have been located in Marion County. Table 2 reports the distribution of EDGE projects by county, specifically reporting the top 10 counties. Five of the top 10 counties are in central Indiana and represent about 35% of the projects. All other counties outside the top 10 contain about 46% of the projects.

Table 2: EDGE Projects by County

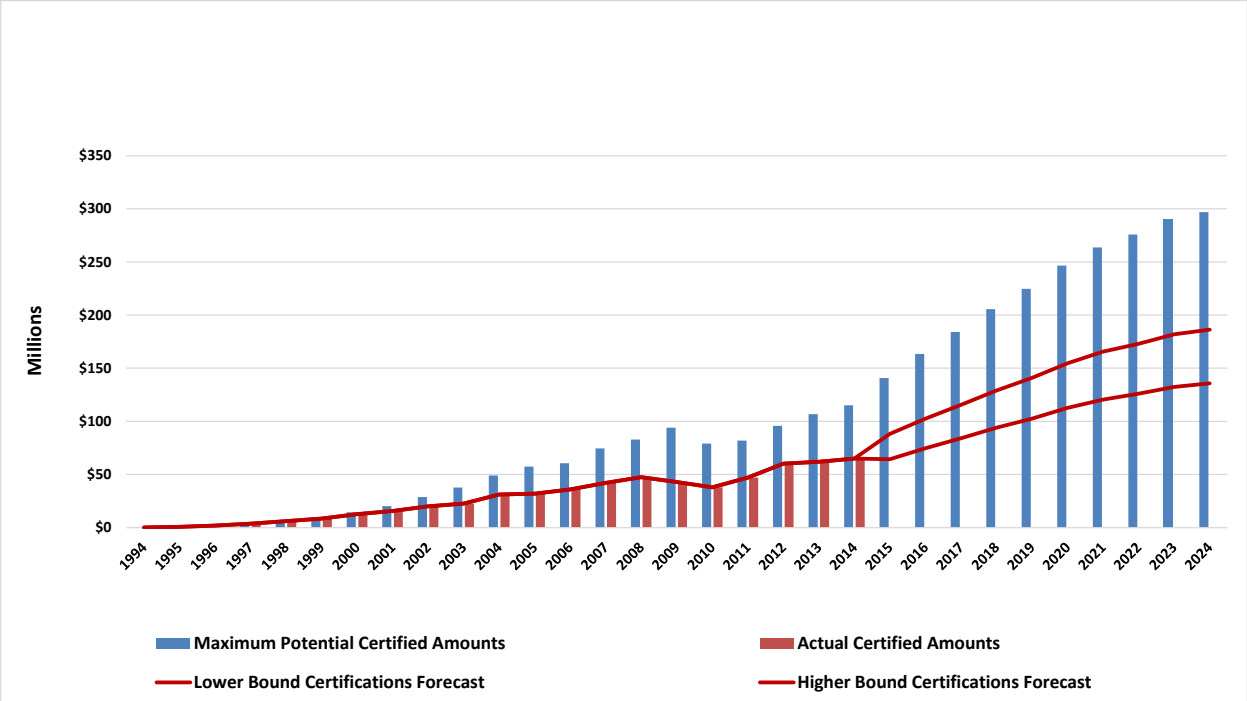
County	Number of Projects	% of Projects
Marion	290	20.71%
Hamilton	89	6.36%
Elkhart	89	6.36%
Allen	76	5.43%
Hendricks	47	3.36%
Clark	38	2.71%
Johnson	37	2.64%
Lake	30	2.14%
Whitley	30	2.14%
Boone	28	2.00%
All Other Counties	646	46.14%
Grand Total	**1,400**	**100.00%**

Source: Raw data provided by the Indiana Economic Development Corporation, data analysis by the Office of Fiscal and Management Analysis.

FISCAL IMPACT OF THE EDGE CREDIT

This section provides estimates of the potential fiscal impact of EDGE credit certifications in the future. Figure 2 displays the flow of actual EDGE credits certified and made available to businesses to claim against tax liability or as refunds (red bars) from 1994 to 2014. Figure 2 also displays for the same period the credit amounts under EDGE contracts distributed over the life of the contracts (blue bars). These amounts reflect the annual maximum potential credit amounts that could have been certified to businesses from 1994 to 2014 had the businesses reached the employment goals of their respective EDGE credit contracts. Beginning with 2015, Figure 2 displays estimates of this maximum credit amount (blue bars) as well as an estimated range for credits certified and made available for businesses to claim against tax liability or as refunds (red lines).

Figure 2: Actual and Estimated EDGE Credit Certifications



Source: Raw data provided by the Indiana Economic Development Corporation, data analysis by the Office of Fiscal and Management Analysis.

Table 3 shows the mean, lower bound, and upper bound estimates of EDGE credit certifications for CY 2015 through CY 2019. These estimates are predicated on credit amounts under existing EDGE contracts and a forecast of credit amounts under future EDGE contracts. These contract credit amounts are forecasted using the historical growth of the contract credit amounts from 2003 to 2012. The contract credit amounts total for each year is then allocated as the "maximum potential certified amounts" for future years based on the historical annual distribution of these amounts for active and completed EDGE contracts. Historically, an average of 56% of the "maximum potential certified amounts" has been certified and made available to businesses to claim against tax liability or as refunds. The lower and upper bound estimates are based on the minimum and maximum percentage that has been experienced. The estimates also account for fiscal year caps on contract credit amounts.

Table 3: Actual and Estimated Annual EDGE Credit Certifications (in millions)

Calendar Year		Annual Certifications	
2009		$43.0	
2010		$37.9	
2011		$47.1	
2012		$60.1	
2013		$61.9	
2014		$64.9	
Calendar Year	**Lower Bound Certifications Forecast**	**Average Certifications Forecast**	**Higher Bound Certifications Forecast**
2015	$64.3	$78.5	$88.3
2016	$74.6	$91.0	$102.5
2017	$84.1	$102.6	$115.5
2018	$94.0	$114.6	$129.0
2019	$102.6	$125.2	$141.0

Source: Raw data provided by the Indiana Economic Development Corporation,, data analysis by the Office of Fiscal and Management Analysis.

RESEARCH ON THE EFFECTIVENESS OF EMPLOYMENT TAX INCENTIVES

This section highlights published research estimating the employment effects of employment tax incentives like the EDGE credit. An extensive literature has developed over the years assessing the economic development impacts of state and local tax levels, economic development programs (e.g., TIF, enterprise zones), and tax incentives. However, only a small portion of this literature focuses on estimating the extent that a business creates or retains jobs because it receives a tax incentive like the EDGE credit. We review five major studies of employment tax incentives which guide some of the effectiveness research OFMA is conducting and which is discussed later in this memorandum. Only one of these studies pertains to Indiana and the EDGE credit. The remaining studies pertain to employment tax incentives that have similarities to and differences from the EDGE credit. The review only summarizes the findings of these studies and highlights some important methodological components of the studies. It is not an exhaustive review that analyzes in detail the differences in the tax incentives or the study methodologies.

Studies by Hicks and LaFaive (2011) and Faulk and Hicks (2013) examine the impact of employment tax credits on employment growth at the county level. In contrast, studies by Gabe

and Kraybill (2002), Faulk (2002), and Lester et al. (2014) examine this relationship using firm-level data. Much like the economic development literature, these studies provide ambiguous results as to the effectiveness of employment tax incentives. In terms of methodology, the firm-level studies may provide improved estimates of the relationship between employment tax credits and employment growth simply because they eliminate the aggregation problems of the county-level studies that may result in biased estimates of the employment effect of the tax incentive. The firm-level studies also employ procedures to correct for selection bias that causes the employment tax credit to be endogenous. If a discretionary employment tax incentive tends to be awarded by state officials to firms already exhibiting employment growth either above or below the average employment growth of businesses, the estimated impact of the tax credit on employment will be biased and invalid. The preexisting employment trend of the credit recipient will be confused for the impact of the tax incentive on employment by the credit recipient. Potentially, this endogeneity problem could result even when the tax incentive is nondiscretionary if firms tend to participate, for example, when they are already planning to increase employment. Finally, all of these studies specify expansive econometric models including various demographic, economic, geographic, and policy factors in addition to the tax credit variable to isolate the tax credit impact and obtain an unbiased estimate of that impact.

Hicks and LaFaive (2011) estimated the impact of Michigan's MEGA job creation tax credit on county income, employment, and unemployment rates using a county panel from 1990 to 2003. The MEGA program ran from 1995 to 2011 and provided discretionary tax credits to businesses that created or retained jobs in Michigan. Thus, the time period for the research covers periods before and after the incipience of the MEGA credit. The credits were awarded at the discretion of the Michigan Economic Development Corporation (MEDC) board under contracts entered into between the MEDC and the credit recipient. Eligibility for the MEGA credit was limited to export industries, and the overwhelming majority of the credits were provided to manufacturing businesses. Over the life of the program, the average credit totaled almost $2,300 per job and the average duration of a credit agreement between the MEDC and a credit recipient was 15.75 years (Bartik and Erickcek, 2014).

To examine the relationship between MEGA credits and county employment, Hicks and LaFaive specify an expansive regional econometric model controlling for the impact of economic trends, the business cycle, labor force participation, and adjoining county influences on county employment. The estimation results suggest that the MEGA tax credit failed to have a discernible impact on employment in the manufacturing or wholesale sectors even though the credits are targeted to businesses in these sectors. Nevertheless, the research suggests that the credits may have indirectly impacted employment levels in the construction sector, albeit the impact was economically small. While the MEGA credit was not targeted to businesses in the construction sector, the researchers concluded that sufficient construction was ensuing from the MEGA credits in the manufacturing and wholesale sectors to generate employment increases in the construction sector.

Faulk and Hicks (2013) analyze the county employment impacts of Indiana's EDGE credit as well as other state and local tax incentives with a single-year cross-sectional approach based on existing IEDC incentive projects. In addition to the impact of IEDC incentive projects on a county's employment, the econometric model also controlled for the impact of demographic and socio-economic factors, labor market factors, and the influences of adjoining states on county employment. The model estimates suggest that EDGE credits have a positive impact on county-level employment (total and in the manufacturing sector). The researchers estimate that the impact on total employment ranges from 5.3 jobs to 6.1 jobs per $1,000 of EDGE credits certified. The manufacturing employment impact, however, is estimated to be much lower at about 1.0 job

per $1,000 of EDGE credits certified. The estimation results suggest that grants from the Skills Enhancement Fund have a positive impact on total employment. However, they find that these grants fail to have a discernible impact on manufacturing employment and that the Hoosier Business Investment credit fails to impact either employment measure.

Faulk (2002) employs firm-level data from corporate tax returns to estimate the employment effects of Georgia's jobs tax credit from 1993 to 1995. The Georgia credit, unlike the EDGE credit, was not a discretionary tax credit requiring state officials to approve and award the credit under a contractual arrangement. However, Faulk uses econometric modeling techniques to correct for the bias resulting from self-selection of certain firms to participate in the tax credit program. The estimation results suggest that firms receiving the tax credit created 23% to 28% more jobs than nonparticipating firms.

Gabe and Kraybill (2002) also correct for selection bias in estimating the impact of employment tax incentives provided by the state of Ohio from 1993 to 1995. The study examined the employment growth of firms receiving the employment incentives in the first two years after the firms launched an expansion. The estimation results suggest that the tax incentives failed to have a positive impact on employment by incentive recipients. In fact, the estimates suggest that the incentives may have dampened the employment growth of firms receiving the incentives in the first two years of an expansion.

Lester et al. (2014) estimate the employment impacts of employment tax incentives provided in North Carolina from 1996 to 2006 for job recruitment and job retention projects. The study employs a quasi-experimental design technique such that businesses receiving incentives are compared to similar businesses not receiving incentives. The job recruitment and job retention incentives provided in North Carolina are shown by the study to result in statistically discernible and economically significant employment growth. Specifically, the researchers estimate that businesses receiving a recruitment incentive on average added about 11.5 more jobs over the timespan of the incentive relative to similar businesses not receiving incentives. For job retention projects, the researchers estimate that businesses receiving incentives grew at a 20% faster rate than similar businesses not receiving incentives.

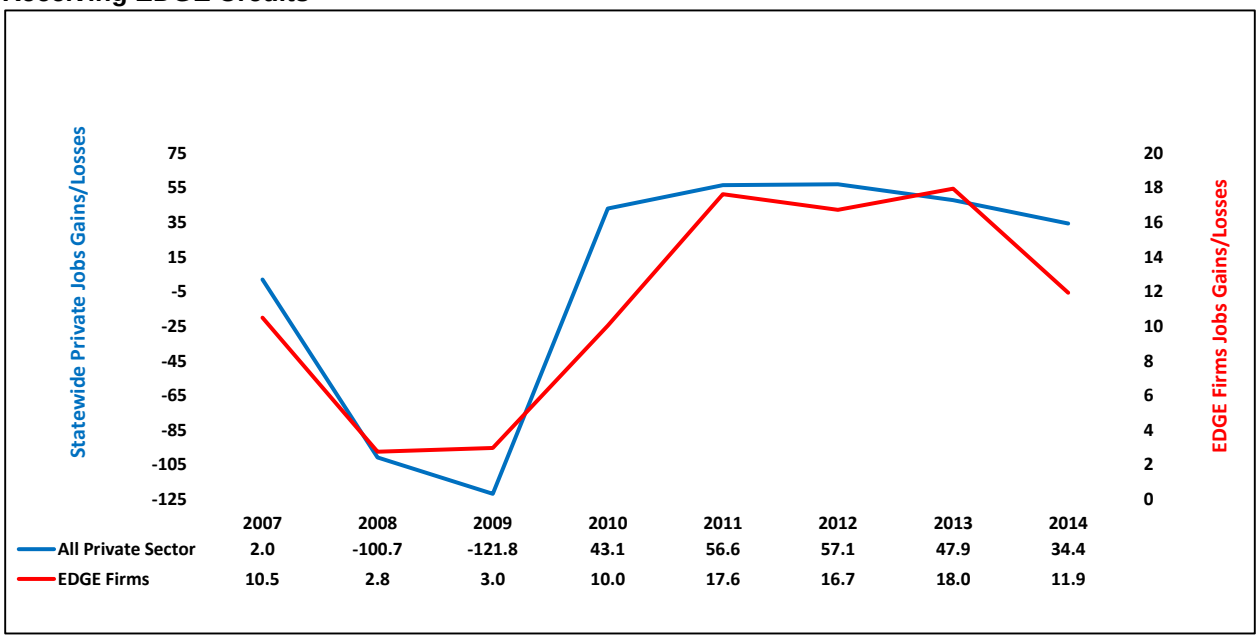
EFFECTIVENESS OF THE EDGE CREDIT

This section summarizes preliminary and exploratory research by OFMA to estimate the impact of the EDGE credit in inducing employment that would otherwise not occur. This research is important not only to understand the effectiveness of the credit (e.g., whether the credit influences firm behavior), but it also has important implications for the validity of cost-benefit analyses aimed at measuring whether the tax revenue that arises in relation to the additional employment outstrips the direct revenue loss from the EDGE credit.

We present summary statistical analysis that examines the differences in employment and employment growth between businesses receiving EDGE credits and businesses that have not received EDGE credits. We also present econometric research that estimates the correlation between EDGE credit certifications and employment growth in the firms receiving EDGE credits. Consistent with existing research on employment tax incentives, our econometric research is conducted at the firm level and corrects for selection bias that would otherwise lead to invalid estimates of this impact.

Summary Statistical Analysis: In the aggregate, the annual flow of net jobs of firms receiving EDGE credits is rather consistent with that of the economy as a whole. Figure 3 compares the net job gains/losses for all Indiana private sector establishments to the net job gains/losses for the firms that receive EDGE credits. It also shows the net job totals for each year in tabular form below the graph. It appears that the growth in jobs for EDGE firms has gradually become a larger share of all private job growth. Figure 3 also illustrates a trend in job growth that is common to both firms receiving EDGE credits and all firms. The firms receiving EDGE credits are also influenced by the business cycle, albeit to a lesser extent.

Figure 3: Annual Net Jobs Gains/Losses (in thousands) - All Indiana Private Firms vs. Firms Receiving EDGE Credits



Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

In an attempt to estimate the impact of the EDGE credit on employment, we compared the changes in employment between firms that received EDGE credits and firms that didn't receive EDGE credits. The analysis uses the employment data from the Quarterly Census of Employment and Wages (QCEW) produced by the U.S. Bureau of Labor Statistics. The QCEW contains both employment and wage information for all establishments operating in Indiana that have employees. We identified firms in the QCEW that executed an EDGE credit agreement with the IEDC and determined which years those firms received EDGE credit certifications. We are able to successfully identify 88% of the EDGE firms in the QCEW data that had or currently have an active EDGE credit agreement.

Figure 4 shows the year-over-year change in total employment by firms while receiving an EDGE credit and all other firms not receiving EDGE credits. Both groups appear to have similar trends. However, the firms receiving EDGE credits exhibit larger increases in employment and don't experience the employment reductions like the firms that don't receive EDGE credits. The large increases in employment by the EDGE credit recipients are likely attributable to attraction projects and expansions by firms that are already large employers.

Figure 4: Change in Employment by Firms Receiving EDGE Credits and Firms Not Receiving EDGE Credits

Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

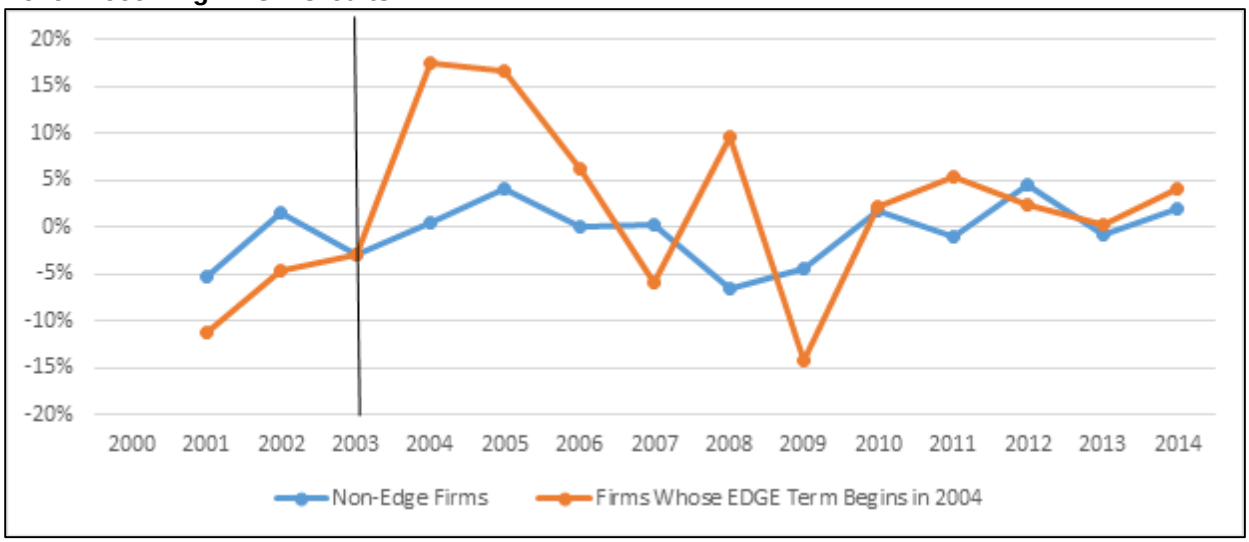
The QCEW also contains information on a firm's primary industry type, so it allows comparisons of firms within particular industry sectors. Figure 5 shows the same comparison as shown in Figure 4, except it focuses only on manufacturing firms. The results in Figure 5 are fairly consistent with those shown in Figure 4. The trends of the two groups appear to be similar. Firms receiving EDGE credits are observed to have greater increases in employment than firms not receiving EDGE credits.

Figure 5: Change in Employment by Manufacturing Firms Receiving EDGE Credits and Manufacturing Firms Not Receiving EDGE Credits

Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

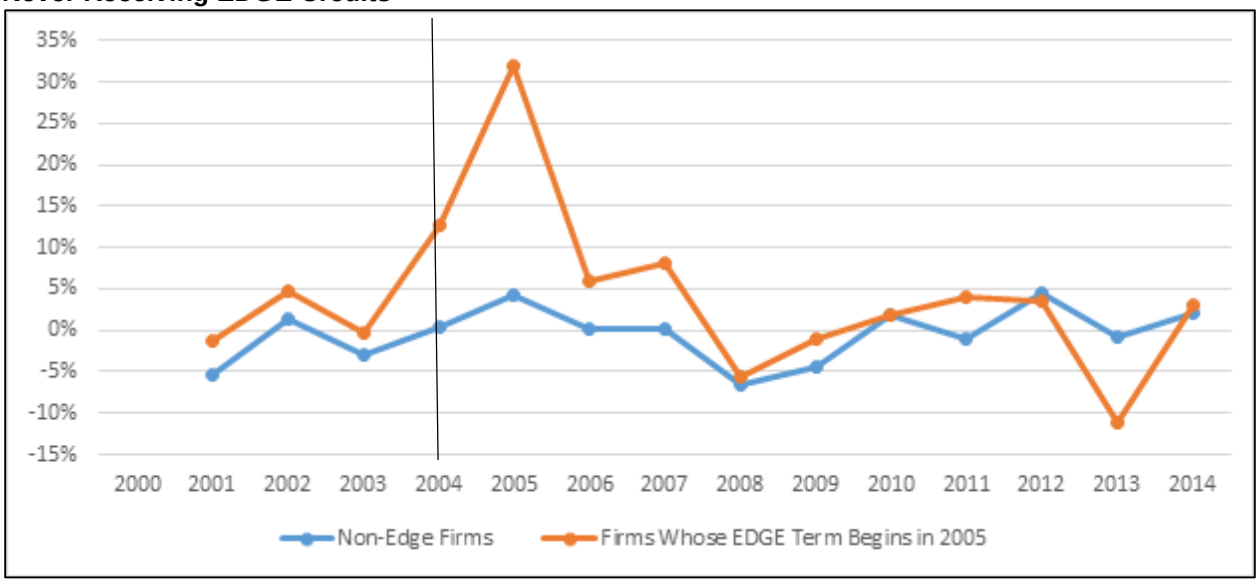
Figure 6 and Figure 7 show the annual changes in employment of firms that never received EDGE credits and two cohorts that received EDGE credits. Figure 6 compares the firms never receiving EDGE credits to firms that started receiving EDGE credits in 2004. Figure 7 shows the same comparison using firms that started receiving EDGE credits in 2005. Both graphs show that firms receiving EDGE credits had strong increases in employment at the beginning of their EDGE term and, on average, stronger overall growth in employment. One observation of interest from the two graphs is the growth prior to the beginning of an EDGE term. The 2004 cohort had weaker growth compared to firms not receiving, while the 2005 cohort had stronger growth in employment.

Figure 6: Change in Employment by Firms Whose EDGE Credit Term Begins in 2004 and Firms Never Receiving EDGE Credits



Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

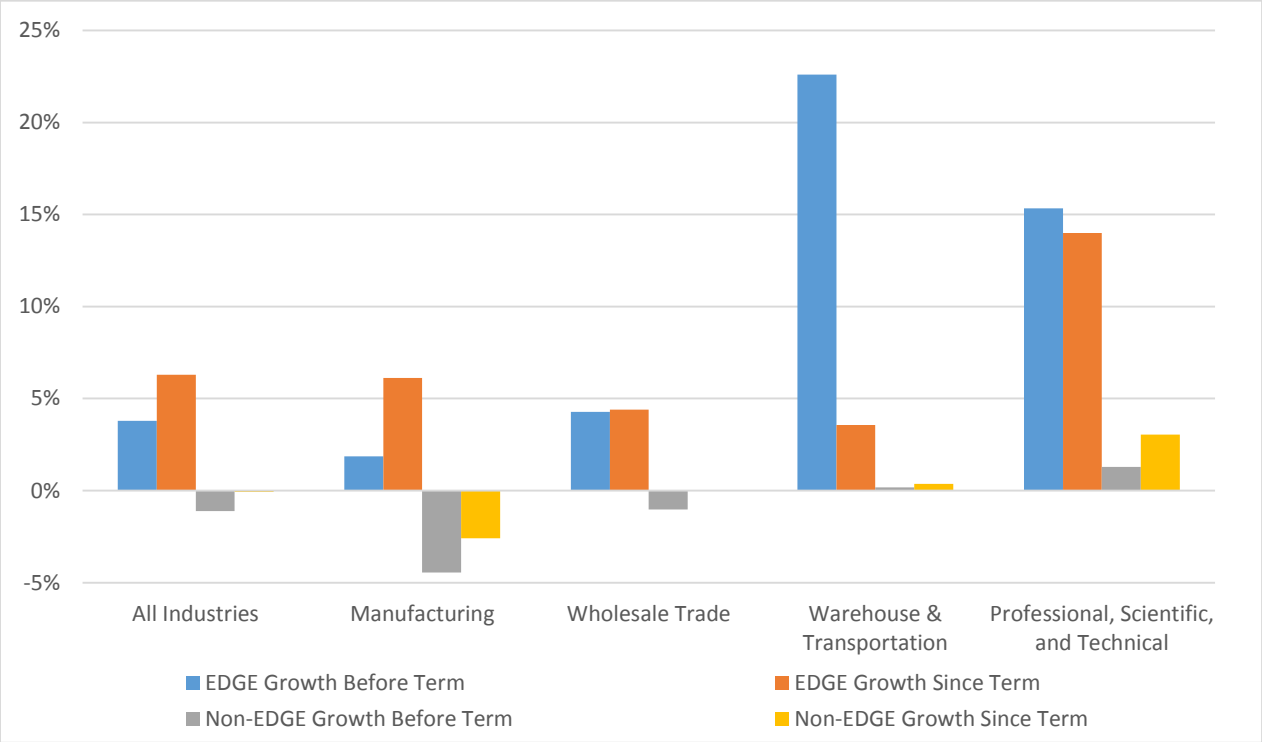
Figure 7: Change in Employment by Firms Whose EDGE Credit Term Begins in 2005 and Firms Never Receiving EDGE Credits



Source: Raw data provided by the Indiana Economic Development Corporation and Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

Figure 8 compares firms that began receiving EDGE credits to firms not receiving EDGE credits based on the average annual change in employment during the time period before the EDGE recipients started receiving credits and the time period after the EDGE recipients began receiving credits. Overall, the employment growth rate for EDGE recipients is lower before receiving EDGE credits, but it is usually higher than firms not receiving EDGE credits for the same time periods. Firms from the warehousing and transportation and professional, scientific, and technical industries that received EDGE credits experienced higher employment growth before receiving EDGE credits and continued to increase employment after they began receiving EDGE credits. Also, firms receiving EDGE credits have, on average, higher employment growth rates than other firms in the same industry over comparable periods of time.

Figure 8: Median Average Annual Growth Rates in Employment of Non-EDGE Firms and Firms with EDGE Terms Beginning Between 2005 and 2011 by Industrial Sector



Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

While this summary analysis does not provide definitive evidence of the effectiveness of the EDGE credit, it does provide some insights into the firms that receive EDGE credits. On average, firms that receive EDGE credits appear to have stronger employment growth than firms in the same industry that don't receive EDGE credits. While it appears that firms receiving EDGE credits are still affected by the business cycle, the negative impacts of economic downturns appear less severe. The summary analysis also raises questions as to whether the EDGE credit explains the differences in employment growth between EDGE credit recipients and firms not receiving EDGE credits or whether there are other characteristics of these firms that explain these differences.

Econometric Analysis

Methodology

To be eligible for the EDGE credit, applicants must meet certain criteria. In short, an applicant must show that a project will result in net new jobs and that receiving the tax credit is a major factor in its decision to move forward with a project. Therefore, only businesses that meet these criteria will apply for the EDGE credit. As such, there exists a selection bias whereby businesses that qualify for the EDGE credit will by self-selection enter the application process and eventually receive the EDGE credit. Due to data limitations, we do not study firms that applied for the EDGE credit but did not receive it.

We employ econometric models to estimate the statistical relationship between the EDGE credit and employment. We aim to determine whether firms that receive the EDGE credit create more jobs than their counterparts. We investigate this by (1) estimating the probability that a firm will receive the credit and (2) estimating employment for EDGE credit recipients given that probability.

After controlling for economic, industrial, and business characteristics that influence the probability that a firm will apply for and receive the EDGE credit, we find:

- There exists significant selection bias, meaning that firms are not randomly selected to receive the EDGE credit.
- The replacement of the Department of Commerce with the IEDC in 2005 has increased slightly the probability that a firm will receive the EDGE credit.
- There is a statistically significant positive correlation between EDGE credits received by firms and employment growth in those firms. The econometric results suggest that the employment effects are economically significant.

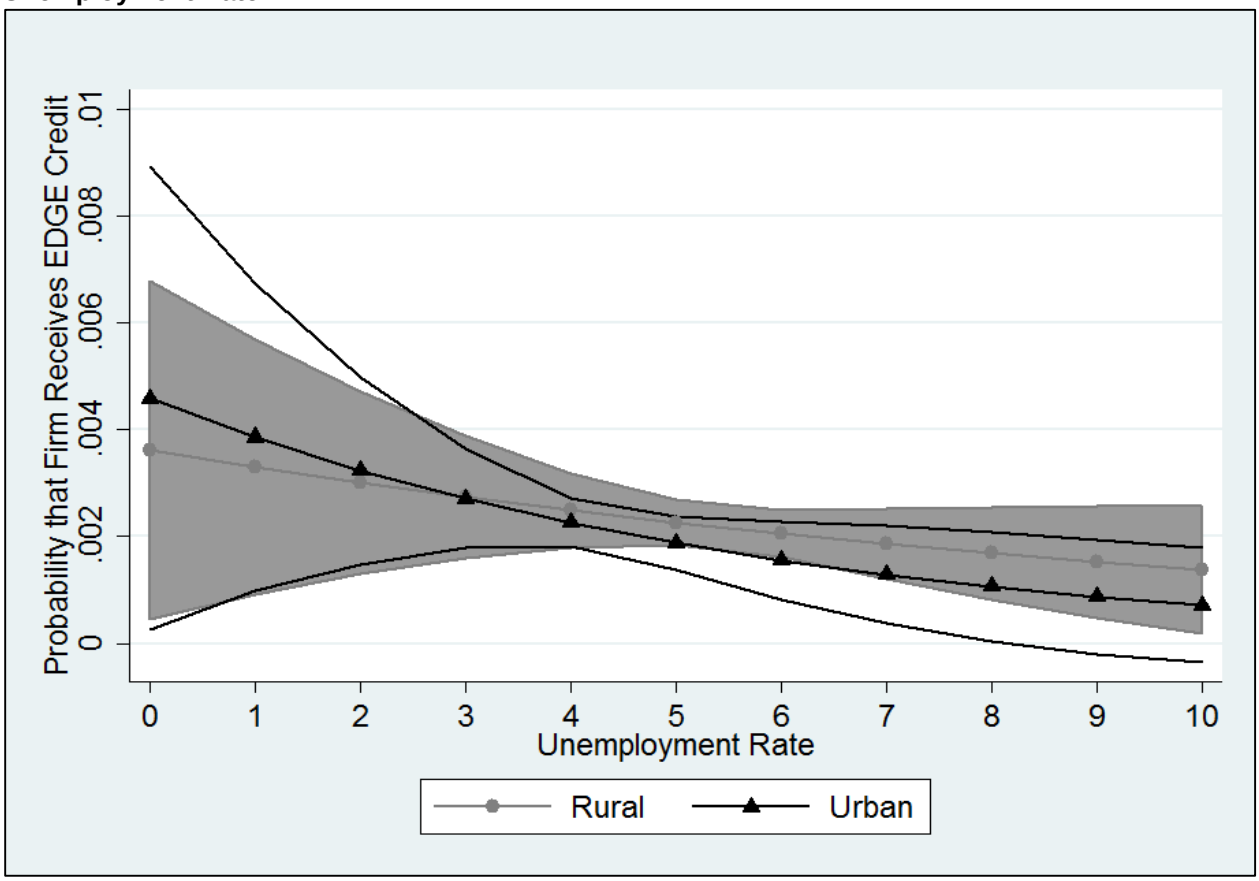
Urban vs. Rural Counties

We recognize the existence of systematic differences between urban and rural counties with respect to economic development. We study the differential effects of various factors in urban and rural counties on the likelihood that a firm receives the EDGE tax credit. The following graphs suggest that urban and rural counties do not face any statistically significant, systematic differences with respect to the likelihood that a firm receives the EDGE credit. However, urban firms tend to experience positive employment in proportion to the credit amounts they receive while rural firms tend to experience declining employment. However, rural firms tend to create slightly more jobs than their urban counterparts during times of economic recovery.

Likelihood that a Firm Receives the EDGE Credit

For counties with no unemployment, urban firms are 0.1% more likely to receive the EDGE credit than rural firms (Figure 9). At higher levels of unemployment, the differential effects of urban and rural firms begin to converge. However, for counties with a high unemployment rate of 10%, rural firms are 0.07% more likely to receive the EDGE credit than their urban counterparts.

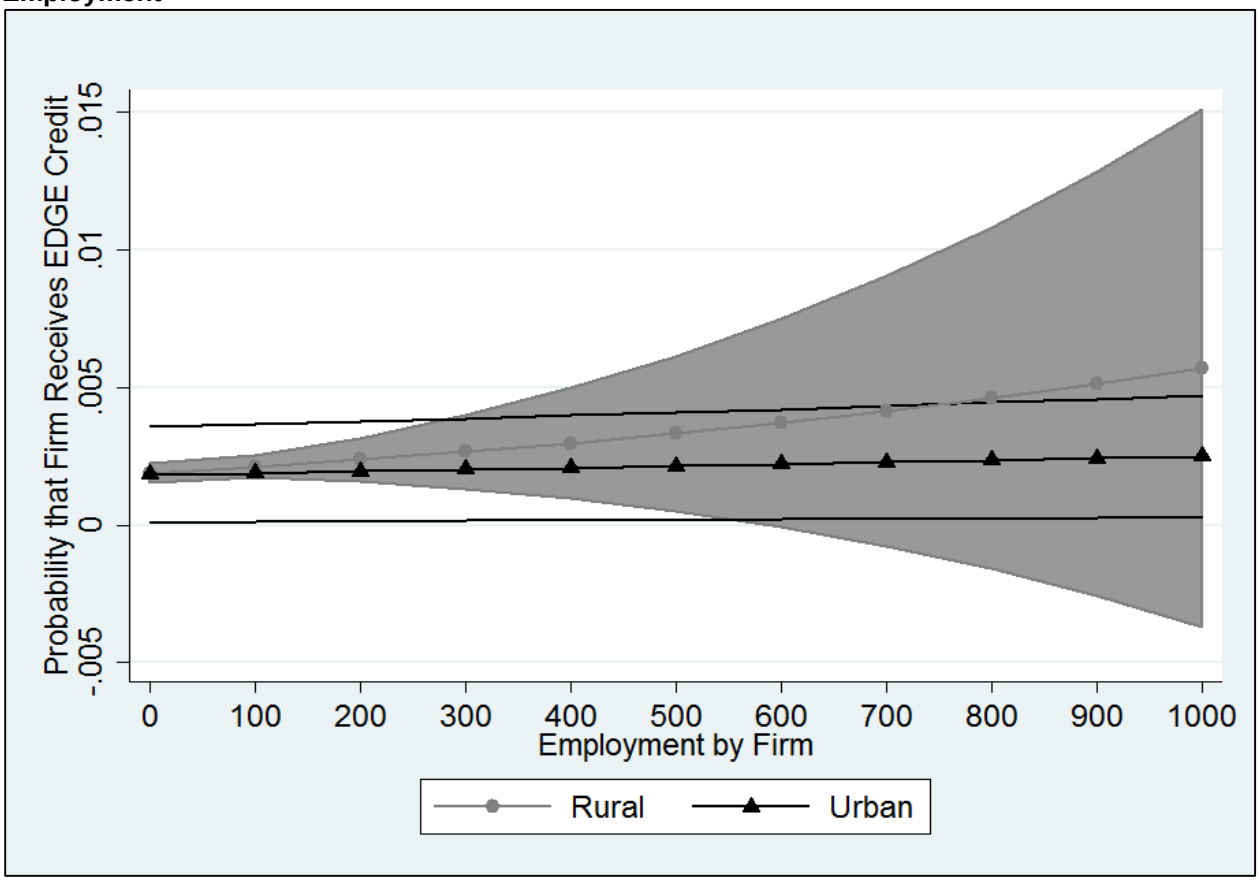
Figure 9: Urban-Rural Difference in Likelihood of Receiving EDGE Credit Dependent on Unemployment Rate



Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

For firms with fewer than 100 employees, those in urban counties and in rural counties are equally likely to receive the credit (Figure 10). However, as firm size grows, firms in rural counties are more likely to receive the credit than firms in urban counties. At the extreme (firms with an average of 1,000 employees), firms in rural counties are approximately 0.3% more likely to receive the credit than firms in urban counties.

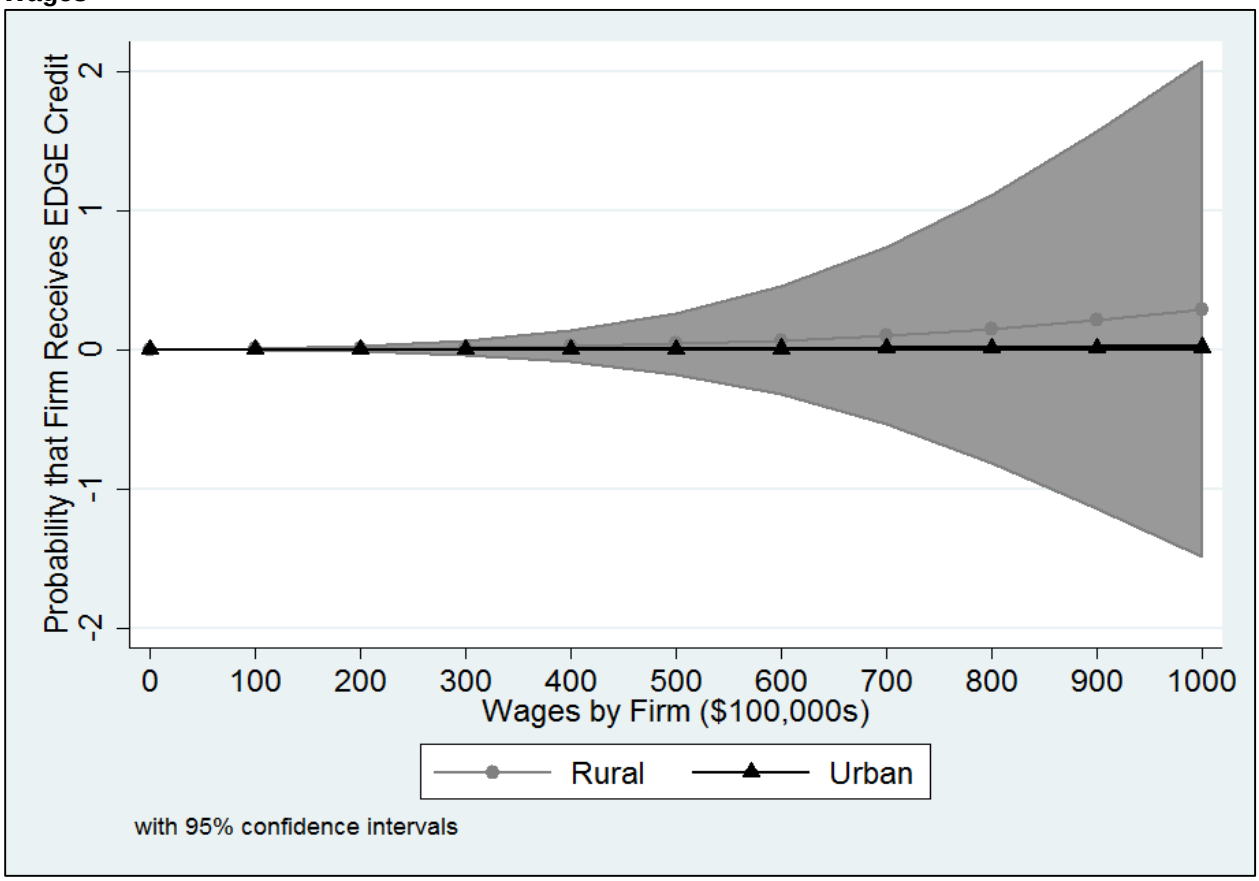
Figure 10: Urban-Rural Difference in Likelihood of Receiving EDGE Credit Dependent on Firm Employment



Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

For firms with less than $10 M in wages, those in urban counties and in rural counties are equally likely to receive the credit (Figure 11). However, firms in rural counties with wages above $70 M are significantly more likely to receive the credit than firms in urban counties. Specifically, rural firms with $70 M, $80 M, $90 M, and $100 M are 9%, 14%, 20%, and 28% more likely, respectively, to receive the credit than urban firms.

Figure 11: Urban-Rural Difference in Likelihood of Receiving EDGE Credit Dependent on Firm Wages

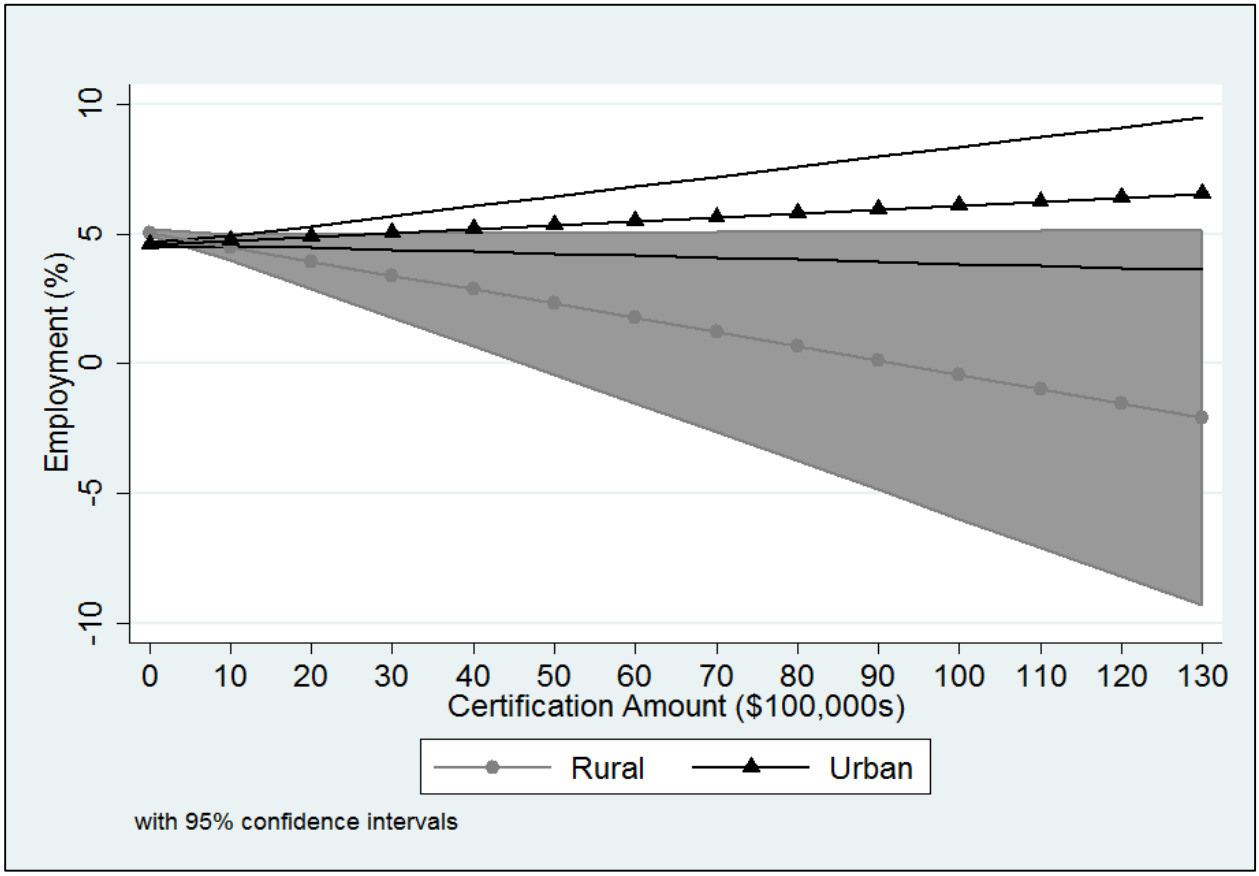


Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

Employment for Firms that Received the EDGE Credit

The differential effects of EDGE certification amounts in urban and rural counties on employment are statistically significant for a majority of the range. While urban and rural firms that receive annual credit certification amounts of less than $1 M tend to create a similar percentage of jobs, this is not the case for larger credit certification amounts (Figure 12). We start to see drastic differences between both firms around $6 M to $9 M. Credit certification amounts of $10 M and above tend to negatively impact rural job creation. On the other hand, urban firms tend to grow their employment proportionally with their certification amounts.

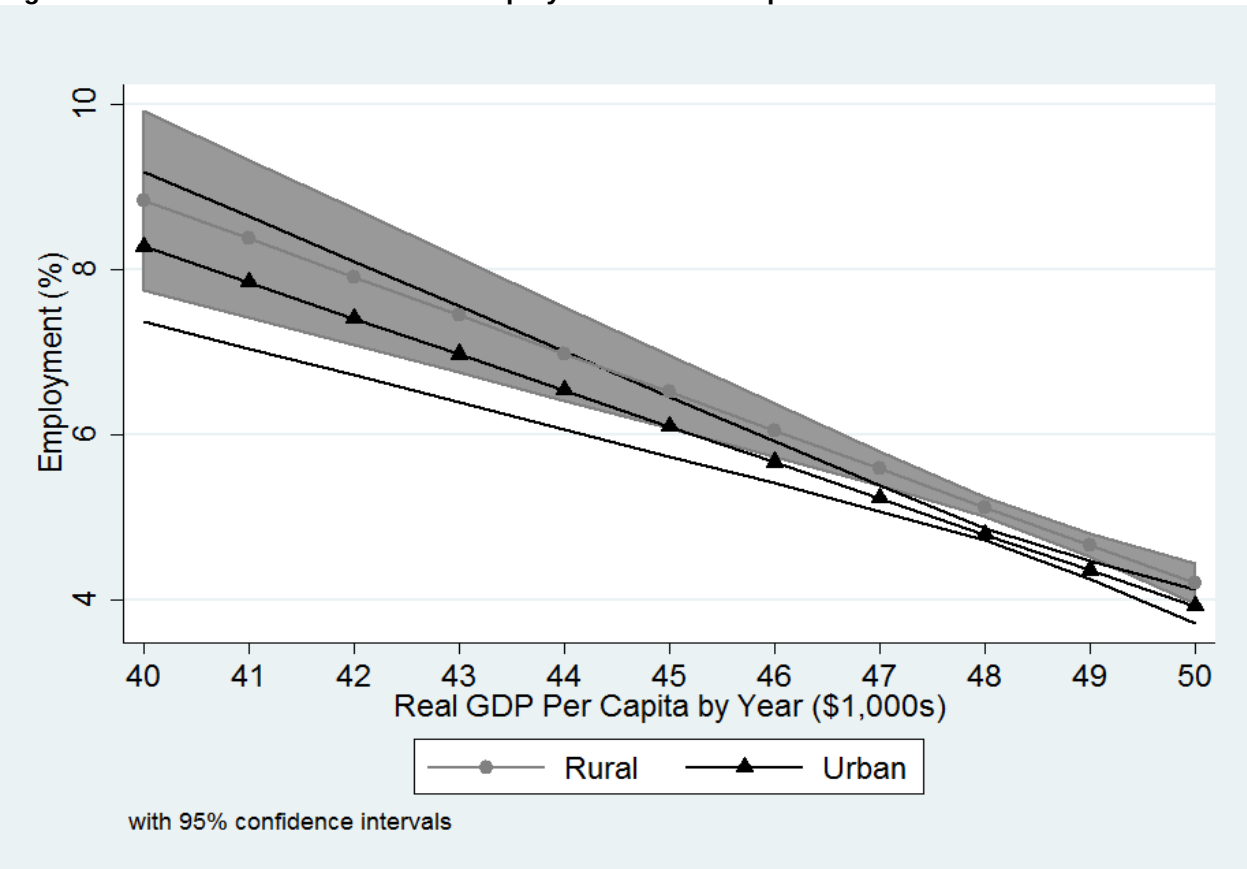
Figure 12: Urban-Rural Difference in Employment Growth Dependent on EDGE Credit Certification Amount



Source: Raw data provided by the Indiana Economic Development Corporation and U.S. Bureau of Labor Statistics, data analysis by the Office of Fiscal and Management Analysis.

The results suggest that firms in rural counties tend to create slightly more jobs than their counterparts as the national economy improves (Figure 13). Higher levels of gross domestic product (GDP) were evident immediately prior to the Great Recession and during recent years of the recovery phase. The graph shows that when the economy experiences GDP of $50,000 per capita, firms in rural counties create 0.3% more jobs than firms in urban counties.

Figure 13: Urban-Rural Difference in Employment Growth Dependent on GDP Growth



REFERENCES

Bartik, Timothy J., and George Erickcek. 2014. Simulating the Effects of the Tax Credit Program of the Michigan Economic Growth Authority on Job Creation and Fiscal Benefits. *Economic Development Quarterly* 28(4): 314-327.

Faulk, Dagney. 2002. Do State Economic Development Incentives Create Jobs? An Analysis of State Employment Tax Credits. *National Tax Journal* 55(2): 263–280.

Faulk, Dagney and Michael J. Hicks. 2013. An Analysis of State and Local Tax Incentives in Indiana. Muncie, IN: Ball State University, Center for Business and Economic Research.

Gabe, Todd M., and David S. Kraybill. 2002. The Effect of State Economic Development Incentives on Employment Growth of Establishments. *Journal of Regional Science* 42(4): 703–730.

Hicks, Michael J., and Michael LaFaive. 2011. The Influence of Targeted Economic Development Tax Incentives on County Economic Growth: Evidence from Michigan's MEGA Credits. *Economic Development Quarterly* 25(2): 193–205.

Lester, T. William, Nichola J. Lowe, and Allan Freyer. 2014. Mediating Incentive Use: A Time-Series Assessment of Economic Development Deals in North Carolina. *Economic Development Quarterly* 28(2): 132-146.